GK GALLIEN-KRUEGER

Neo Series
Bass Combo Amplifier

Owner's Manual

Neo 1001/212

Neo 700/112

Congratulations

Your purchase of a new Gallien-Krueger amplifier is surely the result of much careful consideration on your part. For our part, we at Gallien-Krueger are pleased that you chose us, and are determined that you will be a satisfied customer. In choosing GK, you now own an amplifier with many unique features which will allow you to create your own distinct sound.

To get the most out of your new amplifier please take a few minutes to read through this manual. If you are in a hurry, we suggest you at least read through the Quick Start section before setting up your new rig. This will help get you started and give you a few quick tips, but is not a substitute for reading the rest of the manual.

Your amplifier should have come with the following items, please check the contents of the box to ensure that you have everything.

Power cord	1
Owner's manual	1
Warranty card	1
Safety instructions sheet	1

If your amplifier did not come with all the items listed, or if you encounter problems while setting up your new equipment, please contact your local dealer or GK as soon as possible.

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Always Listening

I have never seen the point in doing things the way others have done them. I also have not been very interested in following the latest fad. I'm a Stanford educated engineer who worked my way through school as a musician. Like all musicians, I have lugged amplifiers up stairways and into car trunks, always wondering why these things had to be so heavy, bulky, and hard to handle.

As I am the principal innovator at GK, our products reflect my attitudes and life experiences. I don't model my designs after other manufacturers' products. Instead, I believe new and old problems are best solved with new solutions. Having taken our own path, GK products enjoy a unique, unmatched sound, allowing you every opportunity to make an original statement.

Having supported my products for over thirty years, I have learned from the story they tell. Gallien-Krueger is a reflection of that story, and has a commitment to support that legacy. Just as the products I created over thirty five years ago are still telling their story, the products we create today will be talking to us tomorrow.

We'll be listening,

Robert Gallien

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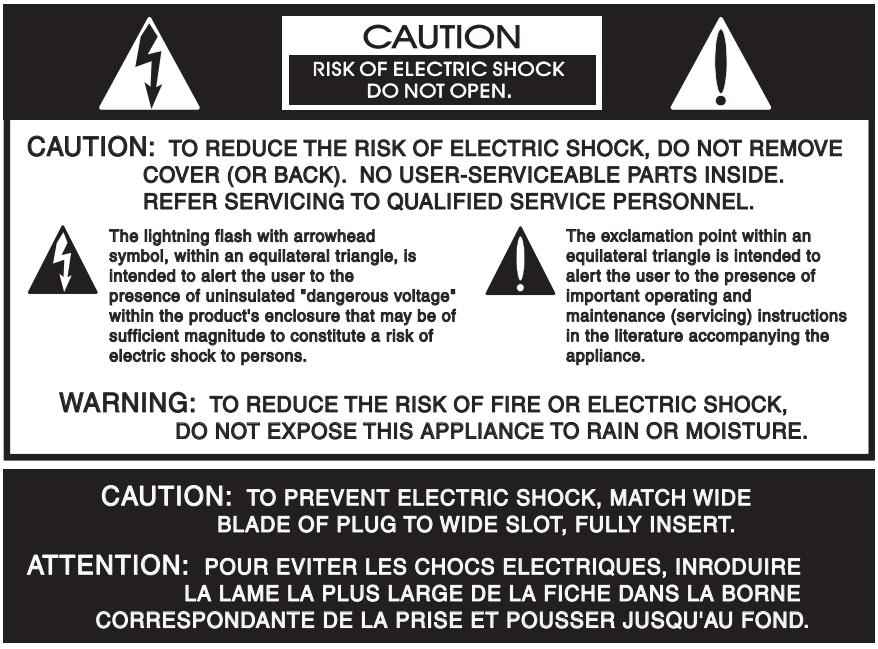
Warning!
this amplifier is capable of producing high sound pressure levels. Continued exposure to high SPL's can cause dameage to your hearing. Always set the volume at a safe listening level or use hearing protection if the unit is operated at higher levels.


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN.
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.
The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.
The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.
WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.
CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.
ATTENTION: POUR EVITER LES CHOCS ELECTRIQUES, INRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

Safety Information

Please read all enclosed safety precautions before connecting or operating this product.

Verify Line Voltage and Amperage: Your new amplifier has been factory configured for use with the following:

120 Volt/60Hz 15 A circuit for USA/Canada.
230 Volt/50Hz 10 A circuit for UK/Australia.
240 Volt/50Hz 10 A circuit for Europe.
100 Volt/50Hz 15 A circuit for Japan.
220 Volt/50Hz 10 A circuit for Korea.

Verify AC Circuit Capacity Before Use: The high power output of your amplifier may require heavy current draw under full-load conditions. Connecting the amplifier to a line with specifications other than indicated above can create a safety or fire hazard and may damage the amplifier. Connecting to the same circuit used by other heavy-power devices, such as high-wattage lights, may cause circuit breakers to trip. It is always a good idea to avoid using any audio equipment on the same AC circuit as equipment with motors, such as air conditioners or refrigerators. This will lessen the possibility of power variation and electrical start-up noise affecting your sound.

AC Power Cord: To avoid safety hazards, use only the power cord supplied with your unit. If a replacement cord is needed, make certain to use a standard IEC compliant cord. Damaged power cords should be replaced immediately. When setting up, make certain that the AC plug is easily accessible. If you do not intend to use the amplifier for a considerable length of time, disconnect the plug from the AC Mains Socket.

Earth Grounding Connection: To prevent electric shock, do not remove the grounding plug on the power cord, or use any plug or extension cord that does not have a grounding plug provided. Make certain that the AC outlet is properly grounded as well. Do not use a ground-lift adapter with this product.

Do Not Open the Amplifier Enclosure: There are no user-serviceable parts inside this product. Opening the amplifier enclosure may present a shock hazard. Modification to the product will void your warranty. If liquid enters the unit, or any metal object such as a paper clip accidentally falls inside the enclosure, disconnect the unit from the AC power source immediately and consult an authorized service station.

Setup: To insure proper operation and to avoid potential safety hazards, place the unit on a firm, level surface. Do not plug or unplug the instrument or speaker cable while the amplifier power is on.

Heat & Ventilation: For proper ventilation, make sure there is at least 8 inches of clearance on top, sides, front and rear of the unit. Avoid using in extremely hot or cold locations and areas that are exposed to direct sunlight or near heating equipment. Avoid using in moist or high humidity areas.

Cleaning & Maintenance: Clean only with a dry cloth. Never use benzene, thinner, alcohol, or other volatile cleaning agents. Do not use abrasive cleaners, as they may damage the finish of metal parts. Avoid spraying insecticides near the unit. No other maintenance should be necessary.

Traveling: If Traveling with the unit frequently, we recommend a road case or cover to protect it from scratches and road wear.

Packaging: The carton and packing materials used in shipping your new amplifier were specifically designed to cushion it from the shocks and vibration that occur during transport. We suggest that you save the carton and packing materials for use in shipping, in the event you move, or the amplifier needs repair.

Quick Start

Plug It In: Set the power switch to Off and connect the supplied power cord to the amplifier's AC receptacle and an AC power outlet of proper voltage (see safety information on page 4 for details).

External Cabinets: If using an external speaker cabinet, connect it to the free speaker output. If you are using two 8 ohm or one 4 ohm external cabinet with a combo amplifier, disconnect the internal speaker. Be sure not to exceed the recommended speaker load below.

Maximum Recommended Speaker Loads:

EXTERNAL SPEAKER(S)	INTERNAL SPEAKERS		TOTAL LOAD
1 x 8 ohm	in	=	4 ohms
1 x 4 ohm	out	=	4 ohms
2 x 8 ohm	out	=	4 ohms

Note: If you are using a GK Horn Bi-Amp compatible speaker cabinet, set it to Bi-Amp using the switch on the back of the cabinet. (See Page 8 for more details on GK's Horn Bi-Amp System)

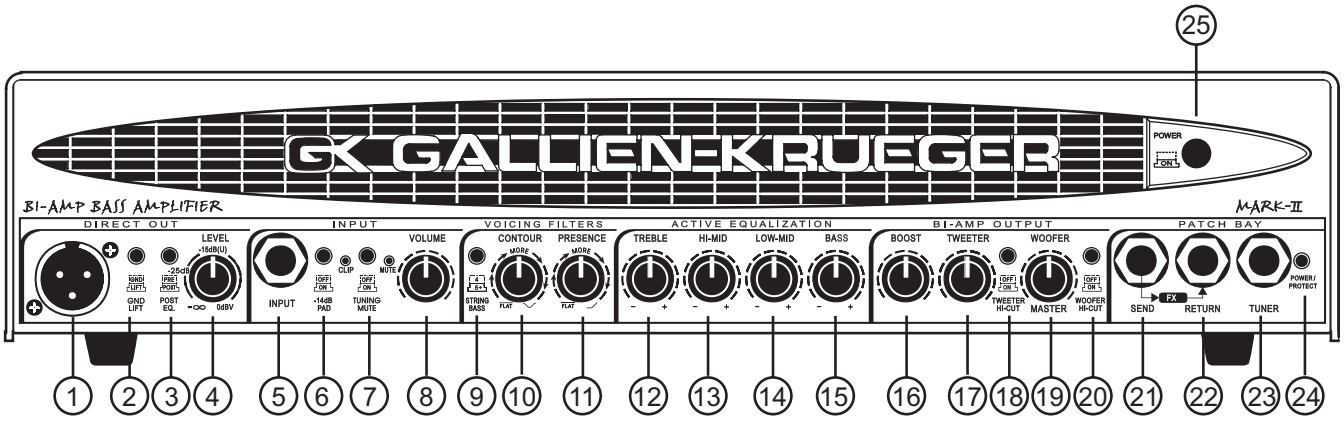
Initial Front Panel Control Settings: Set all EQ controls and the Boost control to 12 o'clock. The Voicing Filters should be turned all the way down to get a flat response. Set the Input and Master Volumes at 0.

Connect Your Bass: Using an instrument (shielded) cable, connect your bass to the Input jack and press the power switch on.

Input and Master Volume Settings: Set the master to 12 o'clock then gradually increase the preamp volume control to a comfortable listening level. If the Clip LED by the input jack lights up while playing, engage the -14dB Pad button.

Lock N' Roll Transport System: The Lock N' Roll transport system is designed for quick and easy rolling of the combo on flat surfaces such as carpet, flooring, pavement, etc. To engage the lock and roll handle, slide the locking latch (below the handle) to the right, and lift the handle up until it stops. Let go of the locking latch and the handle will lock into place. Tilt the combo back and you're ready to go. The 3" wheels on the bottom of the cabinet will automatically engage and allow for smooth rolling.

Note: Never lift the amplifier by the Lock N' Roll handle. It is designed to be used with the wheels on the ground.



Front Panel Features

1) Balanced Direct Out: An electronically balanced low impedance output that you can run to your P.A. system via a mic cable.

2) Ground/Lift: Used to eliminate hum when connnecting to equipment that is running on a different ground system.

3) Pre/Post EQ Button: Sets the Direct Out signal before or after the EQ.

4) Direct Out Level: Controls the output level of the Direct Out.

5) Input: A standard ¼" input jack to plug in active or passive basses using an instrument (shielded) cable.

6) -14dB Pad & Clip LED: Reduces the input signal from your bass. Press in if the Clip LED lights up excessively

7) Tuning Mute Button: Mutes all output signals except for the Tuner output. LED turns on when "Tuning Mute" is engaged.

8) Volume: Sets the pre-amp gain after the input stage.

9) 4/5 String Bass: When engaged, this extends the low frequency range.

10) Contour: Cuts the mid-range frequencies while boosting lows & highs.

11) Presence: Adds edge and definition to higher frequencies.

12) Treble: Active shelving type control which boosts and cuts the high frequencies.

13) High Mid: Active bandpass type control which boosts and cuts at about 1kHz.

14) Low Mid: Active bandpass type control which boosts and cuts at about 250Hz.

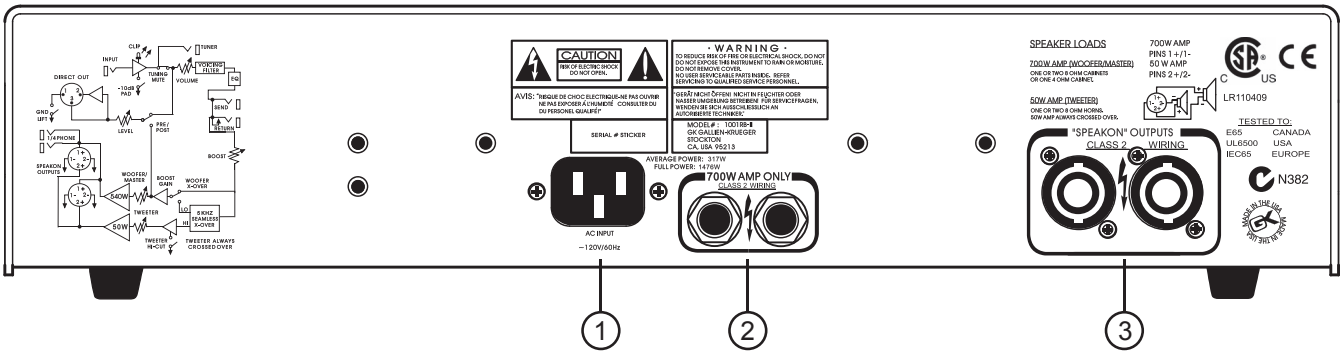
15) Bass: Active shelving type control which boosts and cuts the low frequencies.

16) Boost: A post EQ gain stage using GK's exclusive Valve Effect technology, which adds 'growl' as it is turned up.

17) Tweeter: Master volume control for the 50 watt horn amp. Output signal is 5kHz and above.

18) Tweeter Hi-Cut: Cuts frequencies above 10kHz, which is useful for reducing hiss from the tweeter.

19) Woofer/Master: Master volume control for the woofer (Main) amplifier. Output signal is full-range.



Rear Panel Features

1) AC Receptacle: Standard IEC Receptacle. The power cord plugs in here.

2) 700W or 480W Amp Only: ¼" speaker output jacks. Impedances Lower than 4 Ohms should not be used. Higher impedances such as 8 Ohms, 16 Ohms, or No Load are acceptable. One 4 Ohm, one 8 Ohm, or two 8 Ohm cabinets are okay. One 4 Ohm and one 8 Ohm together is not recommended. The internal speakers equal an 8 Ohm load. No damage will result from operating the amplifier with the speakers disconnected.

3) Speakon Outputs: High current twist-lock Speakon output connectors. Pins 1+ and 1- send a fullrange signal from the Main (Woofer) amplifier. Pins 2+ and 2- send a signal 5kHz and above from the Tweeter amplifier. Use a four-conductor Speakon cable when connected to a GK Horn Bi-Amp compatible speaker cabinet. Use a standard two-conductor Speakon cable when connected to a non-GK cabinet or if you're using a Speakon to ¼" adapter. See Horn Bi-Amp System on page 8 for more information.

Caution:
Do not connect a Speakon cable labeled "Bridge Mode" to the Speakon Outputs. This may result in damage to the amplifier.

20) Woofer Hi-Cut: Cuts frequencies above 5kHz from the Woofer output.

21) Effects Send: When used, the signal path is in-series, meaning all of the signal goes through the Effects Loop.

22) Effects Return: Returns the Effects Loop signal to the signal path. May also be used as a secondary input for another instrument or CD player. The preamp signal is not interupted if the Send jack is not used.

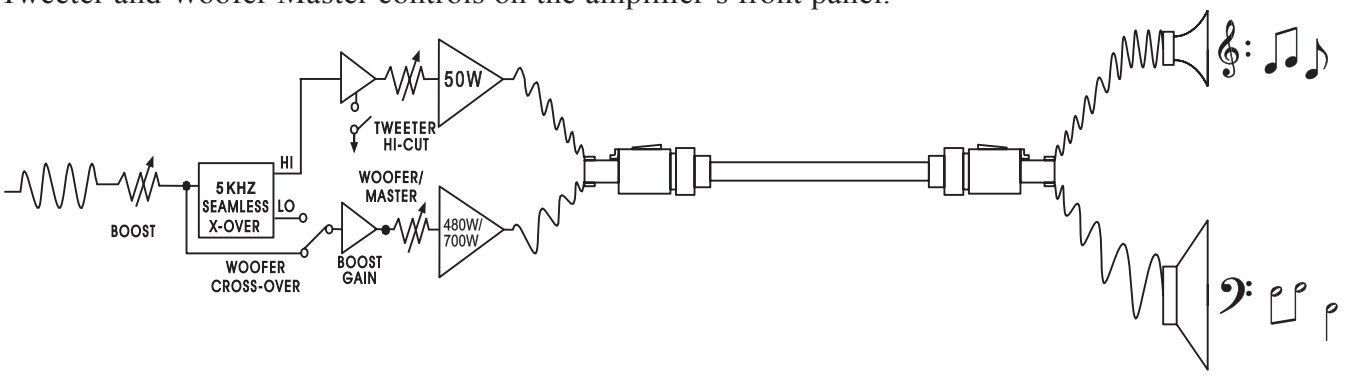
23) Tuner Out: Parallel output comes directly off of the input stage. Unaffected by the Mute button or any of the preamp functions.

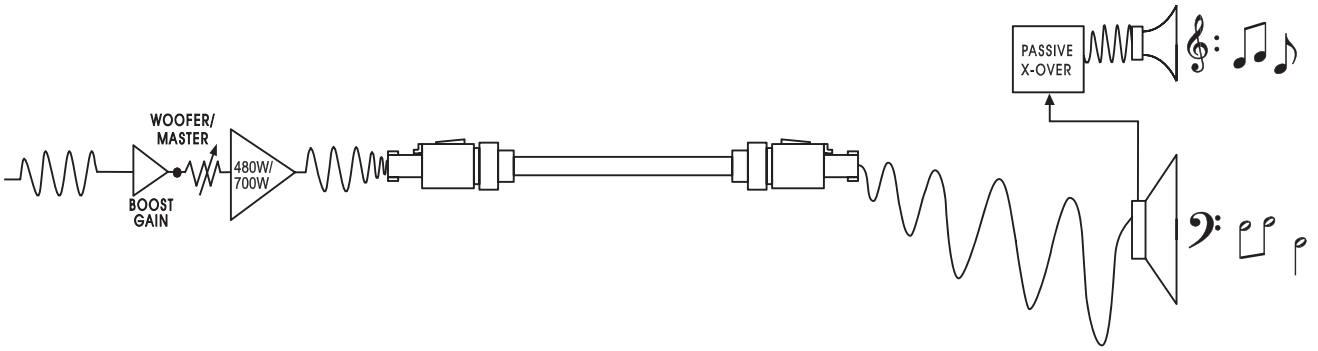
24) Power/Protect LED: The LED will be red for 5 seconds during power-up, then turns blue when the amp is ready. Should a fault occur, the amp will mute and the LED will turn red until the fault is corrected.

23) Power On/Off Button: If you're not sure what this does, you should probably not be operating electronic equipment.

Horn Bi-Amp System:

Your amplifier incorporates GK's unique Horn Bi-Amp System. This feature is automatically engaged when you connect to a GK HBA compatible enclosure, giving you completely independent control of the tweeter and woofer signals. Now you can push the woofers to the max while the tweeter remains clean, crisp, and free of clipping distortion. A smooth tight tone is easily dialed in by adjusting the Tweeter and Woofer Master controls on the amplifier's front panel.





Horn Bi-Amp Mode: This mode requires a GK Horn Bi-Amp compatible bass cabinet. Use a properly wired four-conductor Speakon cable to connect to your cabinet. Set the switch on the back of your GK HBA compatible enclosure to Bi-Amp. In this mode, the cabinet's internal crossover is bypassed. Use the Woofer/Main knob to control the ouput signal to the woofer, and the Tweeter knob to control the ouput signal to the horn.

Note: *The 50W horn amplifier has a fixed frequency output of 5kHz and up (high frequencies only). It will not provide a useable signal to drive a seperate speaker cabinet.*

GK Speakon Cable Wire Configuration:

1+ Woofer Amp +
1- Woofer Amp -
2+ Horn Amp +
2- Horn Amp -

Fullrange Mode: This mode is compatible with virtually any standard bass cabinet. Use a two-conductor Speakon cable or a ¼" speaker cable to connect to your cabinet. If using a GK HBA compatible enclosure, set the switch on the back of the cabinet to Fullrange. In this mode, the cabinet's internal passive crossover is used to split the signal between the woofer and horn. Use the Woofer/Main knob on the front of the amplifier to control your output level. The Tweeter knob is not used.

Note: *To avoid the risk of damage to the amplifier, do not use a four-conductor Speakon cable with non GK cabinets. Instead use a two-conductor Speakon or ¼" speaker cable.*

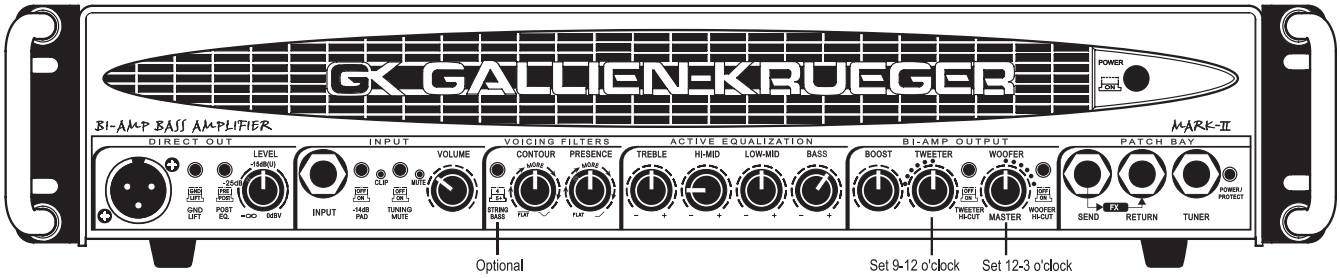
CAUTION: UNDER NO CIRCUMSTANCES SHOULD THE WOOFER/MAIN AMP AND THE 50 WATT HORN AMP BE CONNECTED TOGETHER!!!

Sample Settings:

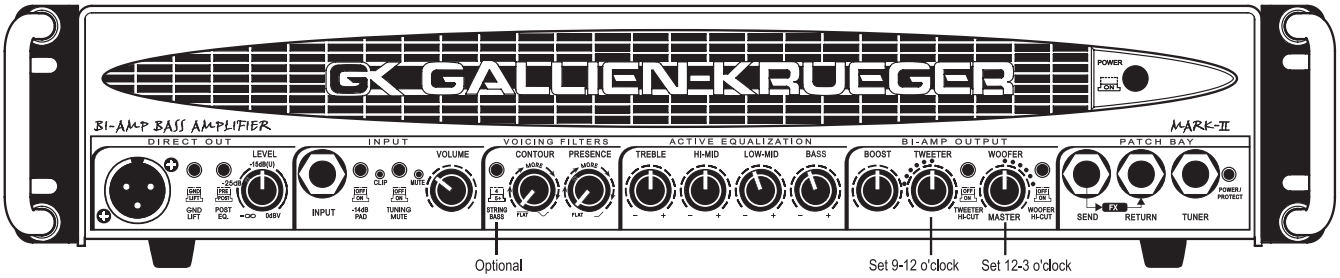
Your GK amplifier is versatile in its sound and tone. Below are a few suggested amp settings that can be used as starting points to define your own sound.

Note: At higher playing levels the contour should be set lower for mid-range clarity. To get 800RB voicing, the contour should be set to 0 or 10 only.

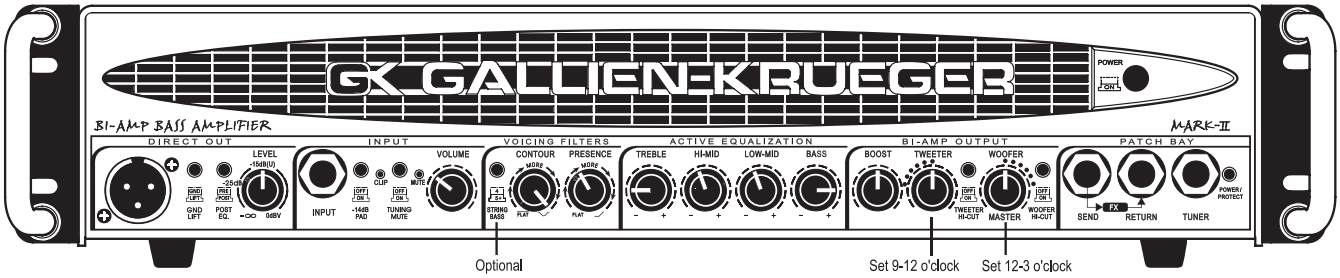
Slap: Both pickups recommended.



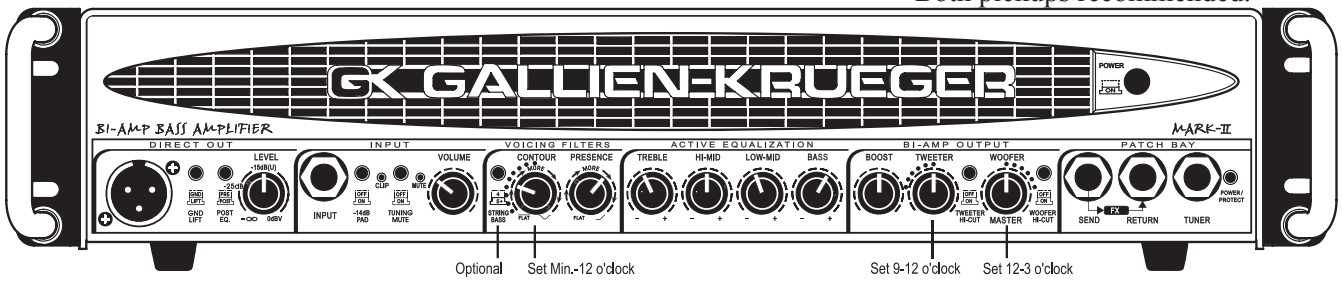
Rock: Both pickups recommended.



Reggae: Front pickup recommended.



Jazz/Fusion: Both pickups recommended.



Tech Talk

Your GK amplifier is designed to be flexible and user-friendly for maximum performance. This is accomplished through these important features:

High Current Capability: When a power amplifier is pushing a speaker cone and it needs to reproduce a high-power transient like a string slap, the amp must be able to deliver a high current pulse to maintain cone control. If the amplifier can't do this it simply cuts the transient off, producing an unresponsive less out front sound. Creating these high current pulses requires extra power devices (four times the current required to deliver its rated power), larger supply capacitors, and intelligent protection logic. GK is the only instrument amplifier manufacturer that goes to the trouble and expense, and it is a big reason why GK amplifiers sound louder and cleaner than other brands at the same power rating.

Active Equalization: There are a wide variety of equalizers used in instrument amplifiers today. Passive equalizers are great but only allow you to cut (signal loss), not boost (signal gain). Graphic equalizers provide plenty of variation, but are much better for room equalization. When used with instruments, they tend to sound unnatural or synthetic. Parametric and semi-parametric equalizers can sound natural and offer a great deal of flexibility but require some technical knowledge and great ears. The equalizer in GK amplifiers is unique in the industry and reflects over 30 years of continuous development and refinement. We've developed a rotary, four-band, active equalizer optimized for bass guitar. The active circuitry allows you to either boost or cut at a given frequency with greater integrity in signal reproduction. The treble is a shelving type control that boosts the high frequencies evenly. Respectively, the bass is a shelving control that evenly boosts the low frequencies. The high mid and low mid are peak (bandpass) type controls with fairly wide Q (bandwidth) patterns which are much more 'musical' sounding. Each of the four bands are connected in series, meaning the output of the first band is fed directly into the input of the next and so on. This eliminates the rippling or combing that can happen with parallel EQ circuits. The overall result from all of this is an equalizer that's flexible, yet easy to use and sounds natural even at extreme settings.

Voicing Filters: The three-stage voicing filter simplifies the process of shaping and coloring your tone, enabling the amplifier to accommodate a wide variety of playing styles with minimal fuss.

4/5 String Bass: The 4/5 String filter extends the low frequency range of the amplifier to accomodate the extra low range of the B string on 5 and 6 string bass guitars. 4 string players may also find desirable results with this filter as well.

Contour: The Contour is based on the same contour circuit as the 800RB, but adds a variable control for precise tone shaping. With the control at zero, the response is essentially 'flat', as in no shaping. As the contour is increased, it scoops out the midrange while subtly emphasizing the lows and highs. Additionally, it compensates to keep the overall volume level constant. With it's variable control, the Contour will accomodate everyone from the smooth finger-style player to the aggressive slap player.

Presence: The Presence control adds extra sparkle on the high-end for better clarity and 'openness' in your tone. This is particularly useful when soloing or playing chords.

The Valve Effect (Boost): Your GK amplifier incorporates what we call the Valve Effect, or G.I.V.E (Gate Induced Valve Effect) technology. We use field effect devices with the gate biased in such a way that emphasizes the optimum harmonic content of the signal. This is controlled by the Boost knob. Raising the Boost while lowering the Master will add more growl while keeping the sound level relatively consistent. The 'growl' is actually a small amount of even order harmonic distortion. For most playing situations, start with the Boost at 12 o'clock. Reduce for a cleaner sound or increase for more growl.

Horn Bi-Amp Operation: Bass players have always liked the growl they get from a slightly overdriven poweramp. The problem is that growl sounds great through woofers but will destroy the horn (tweeter). In a typical fullrange system, there is no way to get that growl while keeping the definition that the horn provides. In GK's Horn Bi-Amp system, an active (electronic) crossover allows a fullrange signal through to the main (woofer) amplifier, while only the high frequency portion of the signal (5kHz and above) is allowed through to the 50 watt Horn amplifier. There are three primary benefits to this system over a traditional fullrange system.

- Significantly reduces the risk of blowing out the horn's diaphram.
- More accurate and natural sounding signal reproduction.
- Allows you to add as much growl to the woofer signal as you want while keeping the horn crystal clear.

Headroom: Your GK amplifier uses a high gain, low noise FET input stage with such a large dynamic range (60v p-p) that even basses with active electronics may not need to use the input pad. The benefit to you is a cleaner signal with less his and much less overall noise.

Efficency: The power supply of your amplifier uses a unique design which switches between a low voltage rail for normal output levels and a high voltage rail to accomodate peak levels. This much more efficient approach allows us to build amplifiers with significantly greater output level at a fraction of the heat and weight. We've also added a tempaerature sensitive cooling system with a variable speed fan. Under normal conditions, the fan will be off or spinning at a low speed. As the amplifier works harder, the fan speed increases, maintaining a safe temperature level.

Intelligent Protection Circuitry: Gallien-Krueger amplifiers use intelligent protection cicuitry which constantly monitors for any unsafe operating conditions such as short circuits or im properly wired speaker cables. If an unsafe condition is detected, the output signal is immediately muted and the power light changes from blue to red. The amplifier will remain muted until the fault is removed. If the protection cicuit activates while playing, turn the amplifier off and check that you have not exceeded the maximum recommended load described in this manual.

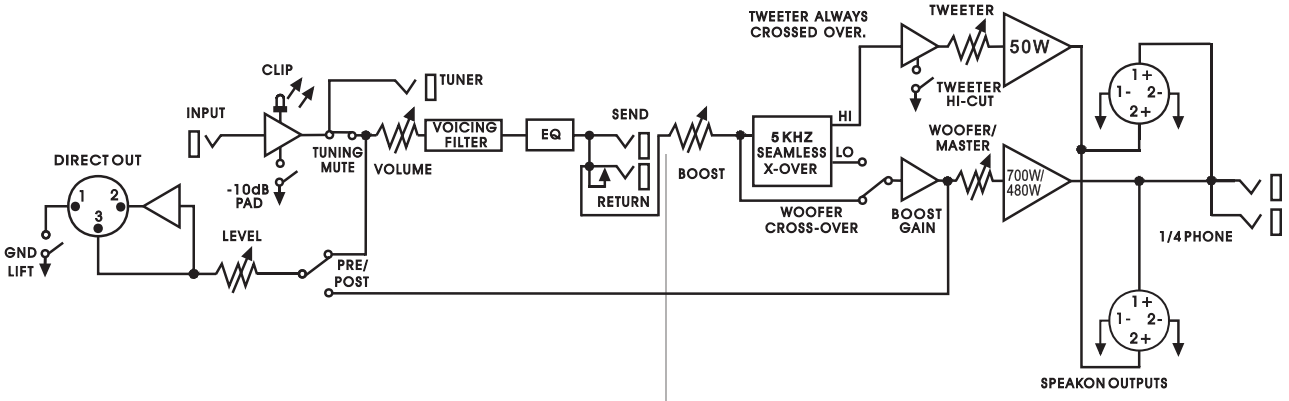
Direct Out: Your GK amplifier includes an electronically balanced DI (Direct Inject) ouput for connecting to PA and recording consoles.This output is calibrated for 1.0V (0 dBV) and can be adjusted via the Level control to match the input sensetivity of the mixing console. A Ground (Gnd) Lift switch is included to remove hum and buzz when connecting to equipment powered by a different ground system. The Post EQ button allows you to set the Direct Out signal to either 'Pre' or 'Post' EQ.

Pre EQ: With the Post EQ button out (Pre), the Direct Out signal is fed straight from the input stage and is only effected by the -14dB Pad, Tuning Mute, and the Direct Out Level control. Adjustments to the voicing filters or EQ section will have no effect on the Direct Out signal.

Post EQ: With the Post EQ button out (Post), any changes you make in the voicing filters, EQ section, Effects Loop (if used) and the Boost will effect the Direct Out signal going to the mixing console.

A Final Word: You should now have a thorough understanding of how your new GK amplifier works and the advantages it offers in helping to get 'YOUR' sound. If you have any questions or comments, please visit our website at www.gallien-krueger.com or send us an email to info@gallien.com. We wish you the best of times on your musical journey wherever it may lead you.

Block Diagram



Output Power:

Main Amp	
Neo 1001/212	460W @ 8 Ohms
	700W @ 4 Ohms
Neo 700/112	320W @ 8 Ohms
	480W @ 4 Ohms
Horn Amp	50W @ 8 Ohms
	75W @ 4 Ohms

Audio Inputs:

Instrument Input	¼" Mono, Unbalanced
Level	0.6V Rms
w/ -14dB pad	1.6V Rms
Impedance	1M Ohm
Return Input	¼" Mono, Unbalanced
Impedance	50k Ohm

Audio Outputs:

Send Output	¼" Mono, Unbalanced
Impedance	220 Ohm
Tuner Output	¼" Mono, Unbalanced
Impedance	10k Ohm
DI Output	XLR, Balanced
Impedance	500 Ohms
Speaker Out	¼" Mono, Unbalanced x2
	Neutrik Speakon® x2

Equalizer:

Bass	±10dB @ 60Hz
Lo-Mid	+6dB/-10dB @ 250Hz
Hi-Mid	+6dB/-10dB @ 1kHz
Treble	+12/-17dB @ 7kHz

Voicing Filters:

4/5 String Bass	+11dB@20Hz
Contour	+2dB@50Hz / -10dB@500Hz / +3dB@7kHz
Presence	+9dB@10kHz

Crossover: Triple pole constant voltage crossover at 5kHz

Noise: -90dB "A" weighted

Cooling: Variable Speed Fan

Protection: Full short circuit, thermal & RF protection. Stable into reactive and mismatched loads. Five second muted warm-up.

Dimensions:

Neo 1001/212	29.9H x 20.7W x 16D
Neo 700/112	19.7H x 20.7W x 16D

Weight:

Neo 1001/212:	80.5lbs
Neo 700/112:	54.5lbs.

Consumption:

Neo 1001/212:	1476W(full), 317W(average)
Neo 700/112:	994W(full), 230W(average)

Fuse:

100V - 120V	T 15 A
220V - 240V	T 10 A

Mains Voltage: USA/Canada 120 Volt/60Hz
UK/Australia 230 Volt/50Hz
Europe 240 Volt/50Hz
Japan 100 Volt/50Hz
Korea 220 Volt/50Hz

Mains Connect: Standard IEC Receptacle